

<p style="text-align: center;"><b>SOWBUG</b></p> <p>Armadillo-like sowbug is a tiny land crustacean needing moist conditions to survive. They live under rocks or debris where they feed on decaying organic matter.</p>	<p style="text-align: center;"><b>MILLIPEDE</b></p>  <p>Wormlike millipedes tend to curl up when disturbed or die.</p>
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Once in the home they soon die because it is too dry for them. They usually die quickly once inside homes because moisture levels are not high enough for them

## Characteristics

Pests such as some types of moths, beetles and weevils are common pantry pests. Crawling stages are generally not much bigger than a grain of rice and are easily missed. Flying pests are easier to see and identify. Both crawling and moth pests have the same life cycle: egg, larvae, pupa and adult. Although the duration of time will vary for different species to complete their respective life cycles, controlling each pest is the same. They are easy to kill but you will notice they keep on emerging. The first step to stopping the cycle is to identify and dispose of infested items; the second is the pesticide application.

## Infestation

In most cases, they were brought to your home with some type of stored food product such as flour, pet food, biscuits, pasta, cereal, dried beans, bread, spices, cookies, and other standard pantry items including birdseed. Although most infestations originate in the kitchen or pantry, be sure to include all areas of the home when trying to identify the main nesting site(s).

## Before Treatment

1. Locating the source or sources of infestation is the first and most important step. All items should be checked for infestation and disposed of when contaminated. Emptied containers must be disinfected. Heavily infested items should be bagged, taken outside and **thrown away**. Uninfested items can be cold- or heat-treated to ensure that any undetected stages are killed. To prevent reinfestation, clean up spilled flour, mixes, crumbs, etc. and thoroughly vacuum and clean areas' cracks and crevices where the contaminated items were stored. Store foods in airtight glass, metal or plastic containers. Clear containers make it easier to check for infestation.
2. Plan to be away for at least **6 to 8 hours** \* after application. This includes most pets\*. Fish tanks should be covered and the filter turned off. Plants are ok.
  - \* Small children under 2 and people with respiratory problems or pregnant should be out overnight according to the BC Ministry guidelines. Apply these same guidelines to special-needs pets.
3. The technician would appreciate access to all cracks and crevices where the contaminated items were stored. Empty affected cupboards and storage units.

## Application

A residual quick-drying chemical is applied to cracks, crevices and shelves in storage areas after removal of stored products.

## After Treatment

Do not wash treated areas, cupboard shelves and drawers for 30 days. Place shelf paper or newspaper on shelves and in drawers before returning any items to the cupboards. Wash all countertops, cutting boards, fridge and stove tops with soap and water before using. Open windows if possible.

Always keep your food products in sealed containers and discard contents at the first signs of contamination.

Thank you for choosing *V.I. Pest Doctor*

Hi,

# Sowbugs, millipedes, and centipedes in the home

Jeffrey Hahn and Mark Ascerno, University of Minnesota

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Sowbugs, millipedes, and centipedes are not actually insects, but are arthropods related to insects. They are not harmful to food, clothes, furniture, or other items within homes, although just their presence can be disturbing. Their preferred habitat is moist, decaying leaf litter or other organic material found around building foundations. When they are found outdoors, we consider them a beneficial group of animals.

During late summer and fall and occasionally during spring and summer, millipedes and sowbugs can leave the soil and leaf litter and crawl into homes, sometimes in very large numbers. They enter through cracks in foundations, around ground-level windows, and under doors. They are commonly found in basements although they may also be found in ground-level rooms. They enter for one of two reasons. First, in the fall, millipedes and sowbugs seek protected places to overwinter. Second, excessive rainfall or ground moisture may force them out of their normal environment in the soil to areas with less moisture. Millipedes and sowbugs can also be found indoors in early spring as they emerge from cracks and crevices where they spent the winter. Sowbugs and millipedes are rarely seen indoors during winter.

It is common for centipedes to actively move indoors from outdoor harborage areas during spring and summer. They are most commonly seen in homes during warm weather. They can be found indoors during winter but are less common.

## Sowbugs



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Figure 1. Sowbug

The sowbug (Figure 1) is a land crustacean related to lobsters, crabs, and crayfish. It is uniformly brownish-gray and may reach a  $\frac{3}{4}$ -inch length. It resembles a tiny turtle or armadillo because of its oval shape and overlapping plates on its backs. A sowbug typically has fourteen legs.

The sowbug's breathing apparatus and body structure require a moist atmosphere, so it only survives where it is damp. Its food consists of decaying organic matter. Sowbugs do not normally survive and reproduce within a home because they require both a damp location, such as a laundry area or basement, and some type of decaying organic matter on which to feed.

## Millipedes



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Figure 2. Millipedes

The millipede is a dark brown, worm-like creature (Figure 2) with up to 400 very short legs. It possesses two pairs of legs per body segment. Despite all these legs, a millipede moves slowly. It grows to be about 1 to 1  $\frac{1}{2}$  inches long and has a characteristic habit of curling up tightly when touched, handled, or after it dies. Millipedes are most active at night and commonly hide beneath objects where it is dark and damp. Like the sowbug, the millipede normally feeds on decaying organic matter.

## Centipedes



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Figure 3. House centipede

The most common centipede is called the house centipede (Figure 3). When full grown, it is more than an inch long. It has a flattened body with 15 pairs of long, jointed legs attached along the sides, one pair of legs per body segment. The legs are very evident when the centipede is standing or running. The body is brownish or grayish-yellow sometimes marked with three dark longitudinal stripes visible from above. The legs are clearly striped. A pair of long slender feelers extends forward from the head.

Centipedes move quickly and are usually noticed running across a wall, ceiling, or open room toward a dark area where it is difficult to find them. It is also common for centipedes to stop abruptly and remain motionless before they suddenly begin running again. Centipedes are often associated with damp conditions.

Centipedes are predators, feeding on small, living creatures such as insects, spiders, and other arthropods, like sowbugs, and millipedes. They use poison-filled jaws to help subdue their prey. Because of their predaceous habits, centipedes are beneficial arthropods.

Bites by a centipede are rare because it is very shy. Its jaws are also small and cannot break through human skin easily unless the centipede is pressed or squeezed. In the rare event of a bite, some swelling may be expected, but the pain should not be severe.

## Management

Tolerate sowbugs, millipedes, and centipedes when possible. If these arthropods are numerous enough to warrant action, first attempt management with one or more of the following nonchemical methods. If these steps are not sufficient, then use insecticides as a last resort.

### Nonchemical management

*Outdoors:* It is very important to make the outside of your home as unfavorable as possible to sowbugs, millipedes, and centipedes to reduce their numbers.

- Caulk or seal cracks and other openings in exterior foundation walls and around doors and ground-level windows by late summer.
- Remove leaf litter and decaying vegetation from around the foundation which provide food and shelter for sowbugs and millipedes. A border of bare soil around the building next to the foundation also helps to make the area a less favorable habitat.
- Trim and thin foundation planting so that ventilation permits the soil to dry more quickly near the foundation.
- Allow the soil near the house to dry between waterings. Roughening the soil surface will speed drying and will work plant materials into the soil where it is unavailable to sowbugs or millipedes.
- Reduce thatch in your lawn to discourage sowbugs and millipedes. This is best done by dethatching in early fall.

*Indoors:* Within homes, sowbugs and millipedes often die quickly because the environment is usually too dry. When sowbugs or millipedes are frequently found alive, it indicates excessive moisture is present. Use a method to dry the room as a long-term solution. Reduce favorable places for centipedes to hide.

- Remove sowbugs and millipedes with a broom or vacuum cleaner. Kill and remove centipedes as they are seen. Also set out sticky traps (e.g., Roach Motel) on floors where centipedes are often seen to capture them.
- Remove unnecessary boxes, bags, and other clutter that gives centipedes favorable places to hide.
- Caulk or seal behind baseboards and in cracks and crevices where centipedes like to hide.
- Place a dehumidifier in damp areas to sufficiently dry the air. Structural repairs may be necessary to the home and/or yard if a dehumidifier does not keep a room sufficiently dry.

The continued presence of house centipedes suggests that insects are abundant enough to serve as a food supply. Management of insects, spiders, or other prey may be the best treatment for centipedes. Because centipedes feed on a variety of prey, there may not be a single obvious source of food. Reduction of moisture can also help reduce centipede numbers.

## Chemical management

*Outdoors:* If sowbug or millipede numbers are still higher than you can tolerate despite these nonchemical steps, supplement your efforts with an insecticide application. Apply a liquid insecticide around the building's foundation and the adjacent ground in a band to help keep pests out. Common insecticides available to the general public for treating building foundations include: bifenthrin, cyfluthrin, deltamethrin, and permethrin. You may also choose to apply a granular insecticide to the perimeter, such as deltamethrin, lambda-cyhalothrin, or permethrin. Be sure the specific insecticide you purchase is labeled for outdoor use around buildings. Chemical treatment will be less effective if food and shelter exist near the foundation and there are available cracks and spaces for pests to enter the building. Apply an outdoor insecticide in late summer or early fall when sowbugs and millipedes are first noticed indoors.

*Indoors:* Sowbugs and millipedes often die soon after entering homes because it is too dry, making an insecticide application unnecessary. To treat for centipedes, apply an appropriate insecticide where they hide indoors, especially behind baseboards and in cracks and spaces. Select an insecticide that is labeled for indoor use. Common examples of available insecticides include: bifenthrin, cyfluthrin, deltamethrin, esfenvalerate, and permethrin. These insecticides normally are purchased in ready-to-use aerosol or liquid forms. Insecticides will provide only temporary management if excessive moisture and a food supply exists.

## Appearance

Common North American species are brownish, one to 2.5 to 4 cm long; segmented, with two pair of legs per segment.

## Behavior, Diet & Habits

Millipedes normally live outdoors in damp places. Around homes they live in flowerbeds and gardens.

People find millipedes under mulch, piles of dead leaves, or under piles of grass clipping. Millipedes also live under structures like dog houses and storage sheds. Millipedes thrive in places where the soil stays damp. They eat dead leaves and decaying wood particles that they find.

In the fall, millipedes often migrate. They move out of their normal habitat. Scientists suspect they may be trying to get ready for winter. However, millipedes have also been seen migrating after a heavy rain has flooded their habitat. During these migrations, millipedes often find their way into homes.

When they come to a home, millipedes gather on porches and patios. They climb the foundation of the home and they often find entryways. They enter through basement doors and windows, crawlspace vents, and garage doors. Many homeowners find millipedes in their basements. They may hide under furniture or boxes of stored items. Since many basements are dark and undisturbed, the millipedes can be very active.

Crawlspaces are excellent millipede habitats. There are often boxes of stored items and pieces of lumber on the ground under a home. The millipedes can feed on dead leaves that have blown into the crawl space or small pieces of damp or decaying wood.

As they move around, many millipedes move into the living space of the home—often in great numbers. Millipedes can enter homes by crawling under doors that have missing weather stripping. They also enter homes from the garage or by coming up from the crawl space through the floor.

## Reproduction

Eggs are deposited in the soil; most species reach sexual maturity in the second year and live several years after that